

Chapter II

MISSISSIPPI RIVER TO WESTERN FLORIDA

SLUGGISH BEGINNINGS

The first portion of the present Gulf Intracoastal Waterway to receive the attention of the federal government lay east of the Mississippi River. Almost twenty years before Florida and Texas were admitted to the Union, legislation of March 3, 1826 authorized a survey of a canal route between the Atlantic Ocean and the Gulf of Mexico. In 1829, Brigadier General Simon Bernard, a member of the Board of Internal Improvements, and Army Engineer Captain William Tell Poussin, functioning as an assistant to the board, reported their survey findings. After discussing in detail possible canal routes across the Florida peninsula, they cast an eye to the matter of inland coastal navigation from St. Marks to Lake Pontchartrain, which, they stated, could be "rendered secure, safe, and commodious"¹ by means of certain improvements:

1st. A canal along Crooked creek, from Ocklockony river to a convenient point in St. George's sound; through this sound and the canal the Appalachicola will become connected with St. Mark. Secondly. The clearing and deepening of the Santa Rosa sound, at the meeting of tides. Thirdly. A canal from the Bay of Pensacola to that of Mobile, through the Great Lagoon and the river Bon Secour. Fourthly. The deepening of the Pass au Heron, between the eastern point of Dauphin island and the main.

Lake Pontchartrain can be connected with the Mississippi by a canal, which has been projected, at or near New Orleans, and by Bayou Manchac.²

Their proposed improvements set forth the first suggested route for an intracoastal waterway from western Florida to New Orleans, but Congress appropriated no funds for such a projects

A lone appropriation in 1828 provided for one local improvement in the future waterway. Lake Pontchartrain, Lake Borgne, and Mississippi Sound afforded protected passage to vessels traveling between New Orleans and Mobile Bay; however, at Pass au Heron, the natural controlling depth was about 3 feet over the shoal between Mobile Bay and Mississippi Sound. This forced ships navigating the inland route into the open Gulf at Dauphin Island, with increased risk of danger from the elements and corresponding increased rates of insurance. On May 23, 1828, Congress appropriated \$18,000 to deepen the channel through Pass au Heron. Available records indicate this construction was conducted between 1828 and 1832, when a severe southwest storm destroyed the work already accomplished and the effort was discontinued.⁴

After the United States abandoned the Pass au Heron project, John Grant sought a monopoly on the pass. In 1838, he obtained a charter from the state of Alabama authorizing possession of as much of the shell reef as necessary to construct a channel and granting him the power to collect tolls at a rate of fifteen cents per registered ton to defray the cost of the work. By the fall of 1839, he had expended \$100,000 and had completed a channel about 1,300 feet north of Pass au Heron, adequate for vessels drawing 6 feet. A \$25,000 congressional appropriation on August 30, 1852 for a harbor on Lake Pontchartrain near the city of New Orleans resulted in construction of a wooden breakwater that further benefited vessels traversing the entire route from Mobile to New Orleans.⁵ Called "Grants Pass," the dredged channel north of Pass au Heron was later deepened to 8.5 feet and maintained at that depth by periodic dredging until 1869. Considerable traffic plied the inland route between New Orleans, the Mississippi coastal communities, and Mobile, making Grant's venture a profitable one until rail competition entered the picture. Revenue from tolls reached as much as \$23,000 the year before completion of a railroad connecting New Orleans and Mobile. Vessel cargoes consisted primarily of timber, lumber, cotton, naval stores, and sundry merchandise.⁶

The improvement authorized for Pass au Heron in 1828 appears to represent the only appropriation for construction of an intracoastal waterway between Florida and the Mississippi River during the nineteenth century. The meager funding for this potentially vital waterway does not reflect a lack of interest in its development, however. On the contrary, the passing years saw a continuing interest in an intracoastal canal manifested sporadically with several surveys being conducted.

In 1830, Engineer Captain William Chase surveyed all the channels and islands between Mobile and New Orleans, charting the best route for navigation between the two points and marking sites for needed lighthouses and buoys.⁷ Two years later, a congressional act identified two reaches of the coastline to the east to be surveyed for "practicability and cost of canals" to connect the designated bays and rivers. The segments of coastline selected for this study lay between "the waters of St. Andrew's bay and the river and bay of Chattahoochie **lsic1,**⁸ and between Pensacola bay and Bon Secour" just east of Mobile Bay.⁹ Army officers, led by Lieutenant William G. Williams, conducted the survey and reported in 1833 on opening navigation between Mobile Bay and Pensacola Bay to boats drawing 7.5 feet. They recommended a route up Bon Secour Bay and River, eastward by a cut to Bear Creek, on through Bay La Lanche into Perdido Bay from which, by a cut, it would proceed either into the Great Lagoon or into Bayou Grande, an arm of Pensacola Bay. They estimated a cost of \$1 million for the route into Great Lagoon and \$2 million for that into Bayou Grande.¹⁰ Sparse political backing for the canal in these coastal areas resulted again in no funding from Congress.

Federal interest in the inland waterway along the Gulf Coast lay dormant for another forty-two years, during which the growing nation concentrated its energies in other directions: pushing back frontiers, laying out roads and railroads, fighting a disruptive Civil War, and subduing the native American Indians as they struggled to preserve their threatened lifestyles. The proposed waterway demanded fresh attention in the decade of the 1870s along with renewed interest in many civil. works.

By 1873, the citizens of Savannah, Georgia aspired to secure a share of the thriving Mississippi River commerce. The mayor and the Savannah Chamber of Commerce requested a review of the proposed project for an intracoastal waterway connecting New Orleans with Savannah. Captains Charles W. Howell and Andrew N. Damrell, stationed at the United States Engineer Offices in New Orleans and Mobile, respectively, received instructions to provide the information sought by the Savannah citizenry. Looking at the reach between the Mississippi River and the Apalachicola River, these officers determined a 9-foot-deep channel would be required to accommodate "first-class grain-barges" that measured 40 feet in beam, 220 feet in length, and could carry 1,500 tons of bulk corn or a total of 55,000 bushels. Damrell calculated the cost of construction for improvement between Mobile and Apalachicola at \$7 million. Both officers considered such an inland route (9 by 100 feet) feasible from an engineering standpoint but agreed that its financial prospects were dismal. Howell declared it "preposterous to think Savannah could draw any portion of the Mississippi commerce, either export or import." He did, however, recognize potential military justification for an inland waterway continuing across the Florida peninsula, stating, 'In time of war, supposing the Gulf ports blockaded by a hostile fleet and Savannah not, this inland-water route would be invaluable.'" ¹

Still, the concept of safe, land-locked navigation between the Mississippi River and the Atlantic Coast persisted, giving rise to authorization in 1875 for the most comprehensive survey of this stretch to date.¹² To encompass a canal across Florida and an inland route along the Gulf coasts of Florida, Alabama, and Louisiana to the Mississippi River, the survey met the same fate as did so many other attempts for waterway improvement--lack of funds.

On April 3, 1876, Chief of Engineers Brigadier General Andrew A. Humphreys informed Secretary of War Alphonso Taft that the appropriations were not sufficient to perform the required examinations and surveys. As a substitute, he submitted extracts of the reports from the prior surveys authorized in 1826 and 1852 as well as the reports from Captains Howell and Damrell made in 1873. He also referred to the two possible routes for moving the Mississippi River grain trade to the Atlantic; these had been pointed out by the Senate Committee on Transportation-Routes to the Seaboard in April, 1874. One route, essentially inland, retraced earlier schemes to run along the coastline through Lake Pontchartrain *or* Lake Borgne and continue by means of short canals and land-locked bodies of water to the

Florida coast and by canal to the Atlantic. The other route ran an exterior line, along which steamers and their tows passing out of the mouths of the Mississippi might travel along the shores to a western terminus of a Florida canal at either the mouth of the Suwannee River or the Withlacoochee River or at Tampa Bay. For opening a channel near New Orleans, Humphreys considered the most economical route to originate at a point about 12 miles below the city, with a lock required at the connection with the Mississippi River.¹³

Most of the remaining work necessary to establish a 'continuous line of bay, river, and canal navigation' between the Mississippi and Apalachicola lay within the eastern two-thirds of the 300-mile route, between Grants Pass and the Apalachicola River. For the inland route between Mobile Bay and Pensacola Bay, Humphreys referred to the examination made in 1833 with two possible courses at the Pensacola Bay end. Continuing eastward from Pensacola, he proposed following Santa Rosa Sound, Choctawhatchee Bay and River, St. Andrew Bay into Wetappo Creek, and then proceeding either by canal into Dead Lake and the Apalachicola River about 30 miles from its mouth, or through Searcy River and Lake Wimico to near the mouth of this river, about 5 miles from Apalachicola. Humphreys estimated that 21 miles of this 200-mile stretch would have to be cut through a "comparatively flat, sandy country" and another 35 miles would require widening and deepening to afford a 9-foot channel.¹⁴ He concluded his report on "Water-Communication Between the Mississippi River and Atlantic Ocean, Across the Peninsula of Florida" by stating, "Should Congress see fit to require a full investigation," a minimum of \$20,000 would have to be appropriated.¹⁵ Congress did not "see fit" at that time and, for all practical purposes, any further progress toward accomplishing an inland waterway east of the Mississippi was shelved by the federal government for the remainder of the nineteenth century.

A FRESH START

The first decade of the twentieth century heralded a new dawn for inland waterway development in the country. Disappointed with the lack of progress on the inland transportation system, President Roosevelt began calling for more dynamic federal action. In 1904, he directed congressional attention to the problems of inadequate railroad regulation.¹⁶ Responding to the demands of the people in the Mississippi Valley, he appointed the Inland Waterways Commission in the spring of 1907. Roosevelt viewed development of a complementary system of water transportation as the "remedy" for the railroads' inability 'to keep transportation abreast of production.' He charged the commission to conduct a broad study, considering rivers as "natural resources of the first rank" and concerning itself with all aspects of the waterways: navigation, flooding, protection of bottomlands, water purification and pollution, and construction of locks and dams.¹⁷

The fall of 1907 witnessed an unprecedented crop of conventions and support for waterway improvements. W. J. McGee, secretary to the Inland Waterways Commissioner, suggested that sentiments reminiscent

of those expressed a century earlier were not purely coincidental: "We are in the throes of our second waterway agitation The first agitation followed hard on the Revolution." He paid tribute to the viability of the intracoastal concept when he said, "It would seem easy to return to and perfect Gallatin's great waterway system" to afford barge passage "from Benton to Boston or to Brownsville."¹⁸

On February 26, 1908, exactly 100 years after Gallatin presented his historic report, President Roosevelt transmitted the preliminary report of the Inland Waterways Commission to Congress. Underlying the report was the basic premise that "every waterway should be made to serve the people as largely and in as many different ways as possible."¹⁹ The commissioners addressed the nation's water resources in their fullest sense, recommending plans to improve navigation but at the same time taking into account purification, power development, flood control, land reclamation by irrigation and drainage, and other benefits that might stem from such control.²⁰ The report contained recommendations but no specific plan per se. Roosevelt laid before Congress the need for, first, "a definite and progressive policy" and, second, "a concrete general plan."²¹

The surveys authorized in the landmark Rivers and Harbors Act of March 3, 1909 included study for "a continuous waterway, inland where practicable," along the Gulf from St. George Sound in Florida to the Mississippi River at New Orleans. The Army Engineers charged with this assignment were instructed to ascertain costs for a channel with a maximum depth of 9 feet or less where shallower drafts would suffice. The designated route incorporated St. George Sound, St. Andrew Bay near Panama City, Choctawhatchee Bay, Pensacola Bay, Perdido Bay, Mobile Bay, Mississippi Sound, Lake Borgne, and Lake Pontchartrain.²²

The work in the northwestern Florida portion of the survey included some of the most hazardous features of the entire undertaking. The Engineer employees encountered swampy terrain inhabited by wild turkeys, bears, panthers, alligators, and poisonous reptiles and infested with mosquitoes and deer flies. To conduct the distasteful task of exploring this unpleasant region, each surveyman counted among his essential accoutrements rubber boots, snake bite kits, and side arms.²³

The following year, the Rivers and Harbors Act of June 25, 1910 made the gesture that transformed the future Florida-to-Mississippi River waterway from a figment of the imagination into a credible project. So long in coming, two appropriations breathed life into the eastern Gulf waterway. Congress appropriated \$100,000 to improve the channel from Apalachicola River to St. Andrew Bay and specified a second appropriation of \$24,000 to improve Santa Rosa Sound so as to afford a continuous channel from Choctawhatchee Bay to Pensacola.

Apalachicola to St. Andrew Bay

Little had changed geographically between Apalachicola and St. Andrew Bay since Lieutenant William G. Williams surveyed this stretch in 1833. The route favored by the Engineers in 1909 ran from Wetappo

Creek via Searcy Creek and Lake Wimico to the Apalachicola River, about 5 miles above its mouth. Commercial conditions on the adjacent river system, however, had changed drastically since Williams's survey and even since the turn of the century. The commercial significance of this stretch of inland waterway derived largely from its proximity to the 470-mile navigable system composed of the Flint, Chattahoochee, Chipola, and Apalachicola rivers. Between 1898 and 1908, the value of commerce hauled on these rivers rose from \$1.5 million to \$12 million. Commodities transported included cotton, cotton seed, cotton-seed meal, fertilizers, lumber, grain, brick, shingles, staves, turpentine, resin, molasses, and provisions. By 1909, users of the Apalachicola River system were crying for a deep-water harbor to realize the fullest potential of its economy. A deep-water outlet was crucial for cotton growers along the river to compete with planters using already deepened cotton ports along the Gulf Coast.²⁴

The three candidates for deep-water development were the ports of Apalachicola, Port St. Joe, and Panama City. Apalachicola was eliminated because of the large amounts of silt carried down the river and deposited in Apalachicola Bay. St. Joseph Bay was thought to be more exposed to the Gulf than St. Andrew Bay and the low, marshy coastal region north of Port St. Joe was considered a deterrent to establishing rail connections from the port to the interior. Panama City had relatively high ground toward the interior, making it more accessible. Thus, the Army Engineers selected Panama City for deep-water port development, enhancing the commercial potential of this eastern stretch of the future GIWW.²⁵ The advantages of these improvements indeed appeared so evident to Captain (later Brigadier General) Harley B. Ferguson that this future president of the Mississippi River Commission concluded his survey recommendation with the statement:

With this short canal and the opening of St. Andrews Bay you will have the engineering problem of a harbor without silt, and a commercial problem with freight assured and the rate thereon regulated by 470 miles of navigable rivers following the natural line of traffic from a rich territory.²⁶

Since the Apalachicola River system supported transportation of commercial vessels with drafts ranging from 2 to 4 feet, channel dimensions of 5 feet deep and 65 feet wide were deemed sufficient for the inland route between Apalachicola and St. Andrew Bay. The channel was constructed to these authorized dimensions between 1911 and 1915. Congress authorized dimensions of 9 by 100 feet in 1935 and the Army Engineers completed this enlargement in 1937.²⁷

Choctawhatchee Bay to Pensacola Bay

The second stretch of the inland waterway along the Gulf provided for in 1910 ran from Choctawhatchee Bay westward to Pensacola Bay. These two bays are connected by a 35-mile-long natural waterway, Santa Rosa Sound, which is protected from the Gulf by a long, narrow sand island. The commerce of this area, consisting mainly of cattle, wool, wood, sheep, and cotton, originated along the Choctawhatchee River, by which it entered the eastern end of Choctawhatchee Bay and was shipped

on shallow-draft schooners and barge tows through Santa Rosa Sound to the ocean port at Pensacola. Numerous large lumbering industries bordering Choctawhatchee Bay also supplied a major part of Pensacola's export trade. Shoals, known as "the Narrows," at the eastern end of Santa Rosa Sound hampered navigation, however. Thus, the congressional appropriation in this reach provided for a channel 6 feet deep to be dredged across the Narrows. Within a year after completion of this improvement in 1912, the 85,132 short tons (naval stores, lumber, hay, feed, and general merchandise) transported on this route reflected an increase of 34,200 tons.²⁸ Army Engineers enlarged the channel to dimensions of 9 by 100 feet in 1937.

Mobile Bay to Mississippi Sound

In 1912, with work underway on the first two (noncontiguous) reaches of the inland waterway, Congress skipped some distance westward and redirected its attention to Grants Pass, just west of Mobile Bay. After the Civil War, as railway transport gained supremacy, Grants Pass had been neglected and the channel had deteriorated. Rather than pay tolls to navigate the undependable channel, many vessel operators preferred the "outside" route through the open waters of the Gulf even though it was longer, more hazardous, and more costly.²⁹ In 1882, great increases in timber, lumber, and coal exports and improvements in Mobile Harbor gave fresh impetus to coastwise trade, leading to a preliminary examination of this shoal by the Army Engineers. The number of vessels using Grants Pass that year increased to 486 and revenues from tolls reached \$4,500. Major Damrell considered channel enlargement "an absolute necessity."³⁰ He submitted another favorable survey report in 1894, recommending improvement at either Grants Pass or Pass au Heron, depending upon the price that would have to be paid for Grants Pass.³¹

By the first decade of the twentieth century, the growth of Mobile as a commercial deep-water port and the growing traffic (63,929 tons in 1906 with lumber as the principal commodity) between Mobile and the ports on Mississippi Sound and New Orleans prompted Congress to appropriate \$50,000 to construct a channel connecting Mobile Bay and Mississippi Sound. The Rivers and Harbors Act dated July 25, 1912 provided for a 10-by-100-foot channel through Pass au Heron, completed in 1914.³²

World War I interrupted the revived thrust for national waterways by diverting appropriations from navigation improvements to pressing military expenditures. By the war's end, the eastern portion of the yet-to-be Gulf Intracoastal Waterway consisted of several segments of improved channel interspersed with stretches that had not been improved. Moving westward from Apalachicola to Panama City on St. Andrew Bay lay the first improved stretch. From the West Bay of St. Andrew Bay to Choctawhatchee Bay, no improvements had been made, forcing traffic between the two bays out into the open Gulf. The stretch from Choctawhatchee Bay to Pensacola Bay was navigable with the improvements in Santa Rosa Sound. From Pensacola to Mobile Bay,

no improvements had been made. The final stretch from Mobile Bay to the Mississippi River reflected improvements at either end that afforded continuous navigation between its two termini.

Federal interest in the eastern leg of the Gulf waterway picked up again in the 1920s. The Rivers and Harbors Act of 1925 authorized new preliminary examinations and surveys for an inland waterway from New Orleans to the Apalachicola River including the Apalachicola and Chattahoochee rivers to Columbus, Georgia, "with a view to securing a depth suitable to the economical operation of self-propelled barges." The same act also identified the stretch between Pensacola and Mobile bays for closer examination.³³

Pensacola Bay to Mobile Bay

When the Army Engineers examined the stretch between Pensacola and Mobile bays as part of the comprehensive survey authorized in 1909, they found low country with a number of disconnected natural waterways and no through navigable route. At that time, the principal argument cited to justify improving this reach was the potential shipment of coal in barges drawing 6 feet of water from the Birmingham mines via the Warrior River system and the proposed canal to Pensacola Bay. Such coal transport was expected to benefit government installations and private consumers in the Pensacola vicinity. This argument could not compensate, however, for the fact that both Mobile and Pensacola had already established ocean trade, the coal traffic on the Warrior River system had not yet developed; the Board of Engineers for Rivers and Harbors viewed prospects for commerce through this stretch as not sufficiently encouraging to warrant improvement.³⁴

By 1929, the commercial justification for improving the stretch between Pensacola and Mobile remained questionable, but a new rationale had been introduced. The report of the survey authorized in 1925 indicated that two commercial routes connected Pensacola (population 38,000) and Mobile (population 100, 000): a 103-mile rail route serviced by the Louisville & Nashville Railroad and a 95-mile "outside" water route plied by the Pensacola, St. Andrews & Gulf Steamship Co. vessel Tarpon. This 281-net-ton steamer, operating on a weekly schedule between Mobile, Pensacola, Panama City, Apalachicola, and Carrabelle, carried 430 passengers and not quite 12,000 short tons of freight during the year 1925. About 77 percent of this commerce was handled between Mobile and Pensacola. The Gulf Division Engineer estimated the proposed canal between Pensacola and Mobile would probably not carry commerce exceeding 75,000 tons annually and predicted that about 90 percent of that would probably move eastward. Concluding that the project was still not economically justified, he did, however, point out that excavation of a mere 16 miles of canal in this stretch would open a continuous waterway westward to Louisiana and Texas and eastward to the eastern end of Choctawhatchee Bay.³⁵

Advised of the tenor of the Division Engineer's report, interested parties provided additional information at a public hearing held by the Board of Engineers for Rivers and Harbors. The commercial traffic

projected for the proposed Pensacola-Mobile inland waterway was revised to 197,000 tons with annual savings in transportation costs amounting to \$130,000. The principal commodities included grain, coal, sand and gravel, resin, lumber, gasoline, iron, steel, and fertilizers. The Board of Engineers further noted the economic impact of the recent entrance of the Frisco Railroad into Pensacola and anticipated that, in view of the size and importance of the ports of Pensacola and Mobile and the existing waterway connections to the east and west, sufficient traffic would develop to justify constructing the canal. The proposed canal would also furnish a connecting link between two other extensive waterway systems: to the east, the Escambia and Backwater rivers, the Narrows, Choctawhatchee Bay, and the Holmes and Choctawhatchee rivers, and, to the west, the Alabama, Tombigbee, and Black Warrior rivers. Added to the potential commercial benefits were those that would result from recreational use by pleasure craft owners. But despite all these tentative justifications, one simple sentence seems to be the clincher in the board's resolve to construct the canal: "A waterway between pensacola Bay and Mobile Bay is a logical improvement in the development of the inland waterway system along the Gulf coast." By 1929, the mood of the country and the Congress was receptive to this kind of logic and the Rivers and Harbors Act of July 3, 1930 authorized \$600,000 for a 9-by-100-foot channel.³⁶

The channel between Pensacola Bay and Mobile Bay was completed early in 1934 at a cost of \$443,000, rather than the \$600,000 appropriated. The route followed Big Lagoon, Old River, Perdido Bay, Bay La Lanche, Wolf Bay, Portage Creek, Bon Secour River, and Bon Secour Bay. Besides improving these natural waterways, the project involved two land cuts amounting to about 7 miles in length. In 1939, repairs were made to an existing jetty at the south side of the canal entrance into Pensacola Bay to protect the channel against the strong tidal currents and thereby avoid excessive maintenance costs. The projected tonnage of 197,000 did not materialize until three years after completion of the canal. Commerce increased rapidly, however, during the prewar years, reaching 632,587 tons in 1941. World War II accounted for particularly heavy traffic, totaling 4,093,595 tons (more than twenty times the projected tonnage) in 1944. By the late 1940s, petroleum products represented the major commodity transported by barges on this waterway.³⁷

Mobile Bay to New Orleans

Besides providing for the Pensacola-to-Mobile canal construction, the 1930 Rivers and Harbors Act also authorized two improvements in the adjacent western stretch between Mobile Bay and New Orleans. By 1929, a total of 514,707 tons moved through the Pass au Heron channel connecting Mobile Bay and Mississippi Sound.³⁸ Barges (some as large as 280 by 49 feet) of the Mississippi-Warrior Service and the International Cement Corporation carried a large portion of this commerce. Grounding and collisions of these vessels occurred frequently within the restricted confines of the 100-foot-wide channel.³⁹ Under the new appropriation, the channel was widened to 300 feet and straightened by the year 1933.

At the New Orleans end of the stretch, commerce required greater depths. The 1930 legislation replaced earlier projects (1852, 1910, and 1917) for the Lake Pontchartrain Channel. Completed in 1933, the new project from Lake Pontchartrain to Mississippi Sound provided for a 9-by-100-foot channel from the 9-foot contour in Lake Pontchartrain (near the end of the state-owned Inner Harbor Navigation Canal leading to the Mississippi River) to the 9-foot contour in Grand Island Pass, connecting Lake Borgne with Mississippi Sound. Thus, the completion of the Pensacola-Mobile stretch in 1934 afforded a continuous channel with 9-foot depths extending from New Orleans to Pensacola.⁴⁰

Finally, the Rivers and Harbors Act of August 30, 1935 cleared the way for a continuous 347-mile thoroughfare for protected navigation between Apalachicola and New Orleans. This eastern segment of the inland waterway would link points between these two termini with such tributaries as the Tombigbee-Black Warrior River system, the Mississippi River system, and the Louisiana and Texas Intracoastal Waterway, opened the preceding year as far west as Galveston. Specifically, the act provided for enlargement of the two previously improved reaches from Apalachicola River to St. Andrew Bay and from Choctawhatchee Bay to Pensacola Bay, resulting in minimum channel dimensions of 9 by 100 feet, accomplished in 1937. The third project adopted in 1935 called for construction of the last "holdout"--the to-date untouched reach from the West Bay arm of St. Andrew Bay to Choctawhatchee Bay.

West Bay to Choctawhatchee Bay

First authorized in 1935, the project for the reach between West Bay and Choctawhatchee Bay proved to be the most troublesome. Extending about 26 west miles from the 10-foot contour in West Bay to the same depth roughly 3 miles out in Choctawhatchee Bay, the canal cut through territory composed of almost pure sand. The land cut began about 7 miles west of the starting point as the channel left West Bay Creek and ran a northwestward inland course. At 15 miles west of the starting point, the ground elevation had risen from 10 feet below sea level to a height of 40 feet above mean low tide, at which peak it continued for another 4 miles" before gradually descending to the 10-foot depth in Choctawhatchee Bay.⁴¹ In other words, for a distance of 4 miles, the sandy banks of the canal loomed 50 feet above the bottom of the 10-foot channel. This section became known in local parlance as the "little Grand Canyon."

Construction of the channel went smoothly at both ends of the reach; private hydraulic pipeline dredges operating under Army Engineer contracts rapidly completed the sections in West Bay, West Bay Creek, and Choctawhatchee Bay. The dredge Duplex, belonging to the Sternberg Dredging Company of St. Louis, worked westward from West Bay and two dredges belonging to the Shell Producers Company of Tampa, the Punta Gorda and the Tennessee, worked eastward from Choctawhatchee Bay. As the dredges moved toward each other into the higher ground, the character of the soil combined with the high bank elevations created a dangerous and time-consuming problem. The sand, rather than sloping off uniformly, would stand in an almost vertical position and then suddenly cave in. This necessitated removing sand from the

ladder and forward part of the dredge's hull as well as backtracking the dredge to a point where the ladder could again be lowered in water.⁴²

Fortunately, a simple procedure solved the problem. When the dredges had advanced far enough into the land cut for the banks to be sufficiently high to function as reservoir walls, the contractors constructed a dam of earth across the channel. The dams and high banks acted as a lock chamber, confining all water discharged by the dredges, seepage water, and water from natural drains to raise the dredges to an elevation at which caving sand no longer posed a serious threat. The desired water level was obtained originally by pumping water from the channel behind the dams into the pools. These artificial reservoirs also served to facilitate handling and connecting pipeline to the shore as well as to prevent a considerable amount of bank erosion that would normally be caused by the water discharged from the dredge.⁴³

The initial cut was made by a small dredge with a short ladder, followed by a larger dredge to provide greater depth. After partially completing the cut, the contractors lowered the water level in the pool and repeated this process. When they had completed the cut, the contractors removed the dams, allowed the water to return to its natural level, and made their final clean-up cut.⁴⁴

Despite the technical difficulties encountered, the Army Engineers in the Mobile District accomplished construction of this segment of the inland waterway, spending \$303,394 less than the \$1,770,000 appropriated. The commercial projections on which digging the canal was justified amounted to 535,000 tons per year, to consist of miscellaneous coastwise traffic of St. Andrew Bay, raw material for paper manufacture, and other commodities. These projections were exceeded in 1941, three years after the canal was opened to navigation, and increased rapidly to the peak war year of 1944, when commercial traffic totaled 3,578,792 tons.⁴⁵

The opening of the West Bay-to-Choctawhatchee Bay reach on April 27, 1938 allowed uninterrupted passage along a Protected waterway with minimum dimensions of 9 by 100 feet between Apalachicola and New Orleans, connecting with many northern and western points beyond.⁴⁶ A natural, though shallow, protected connection through St. George Sound further extended the eastern terminus of the waterway to Carrabelle. This long-awaited inland waterway between Florida and the Mississippi River had been 110 years in the making since the first appropriation for its improvement.

AFTER THE FACT

The story does not end with the accomplishment of the 9-foot channel. Each waterway assumes its own character, fashioned by the impact of often unforeseen physical, social, political, and economic forces that impinge upon it and direct further changes in its development. Certainly this has been true of the Gulf Intracoastal Waterway.

Almost as soon as the "little Grand Canyon" section between West Bay and Choctawhatchee Bay was opened to navigation, bank erosion became a problem. The land cut crossed several natural drains that continued to discharge water into the newly cut channel after its completion. Because the flowline elevations of these streams were considerably higher than the water level in the channel, the canal banks eroded and caused excessive shoaling at their mouths. After experimenting with retaining levees (vertical cut-off walls made of steel sheet piling) located between the inlet control structures for the drains, Army Engineers in the Mobile District adopted a new design with levees composed of earth fill. Water collected in each upright intake structure ran through a corrugated metal pipe down to the canal level, where it could be discharged without damaging the banks. The Engineers completed this erosion protection system in May, 1941. Later, they planted grass on the levee slopes to stabilize the earthen fill. In 1944, while some of the structures were undergoing repair, unusually heavy rainfall exceeded the capacity of this system, resulting in destruction of three control structures, two breaks in the retaining levee, and a completely blocked channel. The Mobile Engineers returned to their drawing boards and modified the system to increase its discharge capacity. They completed their modifications early in 1946 and the system has functioned satisfactorily since that time.⁴⁷

Port St. Joe had been bypassed when the intracoastal canal was dredged from Apalachicola to St. Andrew Bay. This segment of the waterway ran in-land to the north of Port St. Joe's fine natural harbor, which had been improved to a 27-foot depth. The Rivers and Harbors Act of August 26, 1937 called for preliminary examination and survey of a waterway to connect the deep water in St. Joseph Bay with the intracoastal canal. Between the time this study was authorized and the Army Engineers reported on it in 1939, local interests in Gulf County were attempting to revitalize their depressed economy. Industrial activity in this heavily timbered area consisted mainly of the manufacture of paper, naval stores, and other forest products. By October 1938, Gulf County had completed a 9-by-70-foot canal linking St. Joseph Bay with a point on the inland waterway 6 miles away. Bonds that were to be retired by revenue collected from toll charges financed the \$200,000 cost of construction. In April, 1939, the Army Engineers recommended taking over the Gulf County Canal and enlarging it to the dimensions prevailing along the intracoastal waterway. Although the local interests had hoped to be reimbursed by the United States government, the Board of Engineers for Rivers and Harbors noted that the canal had been constructed primarily for local benefit and had effectively revived business activity at Port St. Joe, concluding that such reimbursement would set an undesirable precedent. The Gulf County Canal was incorporated into the federal waterway project free of cost to the federal government in 1943 and enlarged to a width of 100 feet.⁴⁸

The question of how far east the intracoastal waterway should extend was addressed in a preliminary examination and survey from Apalachicola Bay southeast to Withlacoochee River authorized in 1935. The resultant legislation in 1937 provided for a 9-by-100-foot channel as far as St. Marks on Apalachee Bay. The project called for the

Apalachicola end of the reach to be dredged to a point in St. George Sound where natural depths accommodated vessels through to Carrabelle; the eastern end of the authorized route involved an inland channel through Crooked River and Ochlockonee River and Bay. Dredging at the Apalachicola end was eventually accomplished, but at the Apalachee Bay end funding was revoked in 1939 after local interests failed to alter a Georgia, Florida & Alabama railroad bridge across the Ochlockonee River near McIntyre. In 1945, Congress assumed the responsibility for construction of a movable span so that the railroad's inability to alter this bridge would not postpone completion of the intracoastal waterway. By 1952, this railroad had been abandoned, the rail disposed of and the bridge removed along with the requirement for a new bridge.⁴⁹ Army Engineers restudied the project in the 1960s, and found an alternative route, continuing from Carrabelle through St. George Sound into Alligator Harbor and cutting across the land into Ochlockonee Bay, economically feasible but environmentally damaging. This modification was rejected in 1974.⁵⁰ The original authorization still stands, but the channel between Carrabelle and St. Marks remains unimproved; vessels traveling eastward from Apalachicola exit St. George Sound through East Pass, between St. George Island and Dog Island, and continue through the open waters of the Gulf into Apalachee Bay and the channel to St. Marks.

At the outbreak of World War II, the waterway east of the Mississippi was complete to Carrabelle, Florida. The military value of this waterway was quickly recognized as enemy submarines entered the Gulf of Mexico and oceangoing tankers were diverted to overseas shipping lanes. Vital shipments of aviation gasoline to air bases and other military establishments, as well as oil to relieve the critical shortage in the Northeast, were hauled on the inland waterway. Pipelines were laid from Carrabelle to Jacksonville and from Port St. Joe to Chattanooga, Tennessee; gasoline from refineries on the GIWW in Texas and Louisiana was shipped by barge to these pipelines. At the Jacksonville terminus of the pipeline, this precious commodity was again loaded onto barges and shipped via the Atlantic Intracoastal Waterway to the New York-Philadelphia area.⁵¹

To accommodate the increased demands of wartime traffic, Congress passed legislation on July 23, 1942 authorizing enlargement of the inland canal from Apalachee Bay, Florida to Corpus Christi, Texas, with extension to Brownsville at the Mexican border and construction of the pipelines mentioned above. From the Mississippi River to Florida, Army Engineer and private dredges accomplished the new project dimensions of 12 feet in depth by 125 feet in width (150 feet through the open waters in Mississippi Sound) between December 22, 1942 and September 24, 1943. Tonnages carried on the canal during the war years far exceeded even the most optimistic projections used to justify construction of the waterway.⁵²

During the peak war year, 1944, the channel between Apalachee Bay and New Orleans supported transport of 20,735,834 tons. Traffic dropped off considerably after the war (in 1949, this section of the waterway carried only 5,563,171 tons) but has built up steadily since that time to more than 27 million tons in 1969 and to 40,618,351 tons

in 1978. Ranging from slightly over 3 million tons along the sparsely developed reach between Apalachee Bay and Panama City to 22.6 million tons along the heavily industrialized reach between Mobile Bay and New Orleans, this traffic represented large shipments of gasoline, crude petroleum, fuel oils, coal, and lignite as well as a vast array of other commercial items. Except for large quantities of phosphate rock destined for manufacture into fertilizer, movement of most commodities tended to be predominantly eastbound, providing raw materials and vital sources of energy to the eastern section of the country.⁵³